

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1, 2 and 4-10 are pending in the application, with claims 1 and 6 being the independent claims. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 1, 4 and 5 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 4,328,577 to Abbott et al. (Abbott) in view of WESCON/94. 'Idea/Microelectronics' Conference by Sebaa et al. (Sebaa) and U.S. Patent No. 5,787,463 to Gajjar (Gajjar). Claim 2 stands rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Abbott in view of Sebaa and Gajjar as applied to claim 1 above, and further in view of U.S. Patent Application Publication 2001/0013104 to Mann et al. (Mann). Claims 6-9 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No 3,928,730 to Aagaard et al. (Aagard) in view of Abbott, Sebaa and Gajjar. Applicants respectfully traverse the rejection of claims 1-9.

Applicants respectfully submit that the various combined teachings of Abbott, Sebaa, Mann, Aagaard and Gajjar fail to teach or suggest the claimed invention. For example, the combination of references fails to teach or suggest an apparatus comprising, *inter alia*, a switching device that includes only one testing output data path dynamically

configurable to couple to only one of the primary data-paths, wherein the one testing output data-path is dedicated to cyclic redundancy checksum (CRC) output data, as recited in claim 1. Similar features are also recited in claim 6. These features are illustrated, for example, in FIGs. 1 and 2 and paragraph [0019] of Applicants' disclosure.

The Office Action states that "Gajjar teaches hardware dedicated to CRC testing (col. 4, lines 26-57; col. 5, lines 25-52; Fig. 3, CRC 118, Fig. 4, CRC 428)." (Office Action p. 4). Although Gajjar discloses that "CRC generator 116 is dedicated hardware used to calculate the cyclic redundancy check (CRC)" (Gajjar 4:36-38), Gajjar does not teach or suggest one testing *output data-path* that is dedicated to cyclic redundancy checksum (CRC) output data. Gajjar discloses, "Memory bus 108 extends from the second port of staging memory 112 to RAID engine 114. RAID engine 114 includes a RAID processor 116 and a CRC generator 118, each of which is coupled to memory bus 108. ... CRC generator snoops memory bus 108 for data transfers." (Gajjar 4:31-34,43-44).

Gajjar's RAID processor, which shares the bus, or data path, with the CRC generator, is not dedicated to perform only CRC checking. In fact, it performs other functions besides CRC checking, as recited in Applicants' claims. For example, Gajjar discloses, "As known to one skilled in the art, RAID processor 116 is able to perform functions other than just calculating parity on a data block. Merely by way of example, RAID processor 116 may also compare two data blocks, copy a block from one location to another, or fill a block of data with a specified data pattern." (Gajjar 4:58-63). The Office Action stated that it would have been obvious to modify the Abbott monitor "to include dedicated CRC hardware, because then CRC testing would not have been

delayed by any other functions." (Office Action p. 4). However, contrary to this stated reason for obviousness, the RAID processor of Gajjar is used to perform other functions on the data path that would appear to delay the CRC testing.

Furthermore, the RAID processor of Gajjar illustrates how the system of Gajjar would likely not be chosen by a person skilled in the art to form a testing output data-path dynamically configurable to couple to only one of the primary data-paths. The RAID processor of Gajjar appears to be intended to assist in reading, modifying and writing data to a disk array. As disclosed in Gajjar, "the host and RAID engine are competing for access to the same memory bus." (Gajjar 3:42-43). Gajjar appears to allow "pipelining of these transactions to improve system throughput." (Gajjar 3:45-46). However, Gajjar appears to use a "dual-ported staging memory" to allow "loading (writing) or off-loading (reading) of data for the next operation involving staging memory." (Gajjar 3:54-59). After the loading and off-loading, the data and parity information are to be written to the disk drives in the drive array when the bus is free. (Gajjar 3:36-39, 5:41-52). Writing to drive arrays when the bus is free in a RAID system involves different time, cost and space requirements than testing data paths and/or video sources on an integrated circuit. A person skilled in the art would likely not choose to combine Gajjar with Abbott and Sebaa to form a testing output data-path dynamically configurable to couple to only one of the primary data-paths for testing data paths and/or video sources on an integrated circuit.

The Office Action rejects claim 6 under 35 U.S.C. 103(a) based on Aagaard *et al.* in view of Abbott, Sebaa and Gajjar. Similar to the amendment and remarks of claim 1, claim 6 also teaches one testing output data path dynamically configurable to permit monitoring wherein the one testing output data-path is dedicated to cyclic redundancy

checksum (CRC) output data. Aagaard, Sebaa and Gajjar similarly fail to recite this teaching. Therefore, the combination of references suggested in the Office Action would not result in the present invention, as recited in claim 6.

In view of the above arguments, it is clear that claims 1 and 6 (the independent claims) would not have been rendered obvious by the suggested combinations to one of ordinary skill in the art at the time of the invention. Therefore, claims 1 and 6 are allowable under 35 U.S.C. § 103 as being patentable over Abbott, Sebaa, Mann, Aagaard and Gajjar either alone or in combination with one another.

Claims 2, 4 and 5 depend from claim 1 and claims 7-9 depend from claim 6. Therefore, claims 2, 4, 5 and 7-9 are allowable at least for the reasons claims 1 and 6 are allowable, and for the specific features recited therein.

Reconsideration and withdrawal of the rejection of claims 1, 2 and 4-9 is requested.

Allowable Subject Matter

The Office Action indicated that claim 10 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants, however, choose not to rewrite claim 10 at this time.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be

withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Theodore A. Wood
Attorney for Applicants
Registration No. 52,374

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1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

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